FOREST STATISTICS REVIEW
1982-83

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FOR ADDITIONAL COPIES OF THE REPORT, CONTACT:

Alberta Energy and Natural Resources
Information Centre
Main Floor, Bramalea Building
9920 - 108 Street
Edmonton, Alberta, Canada T5K 2M4

Phone: (403) 427-3590

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FOREWORD

This report presents statistical detail pertaining to the activities of the Alberta Forest Service (AFS) during the 1982-83 fiscal year. Summary tables are provided for comparative analysis and observations of trends. Industrial statistics are provided where they are helpful in obtaining a total provincial overview.

ACKNOWLEDGMENTS

Tabular and graphic materials in this report were compiled by the respective branches of the A.F.S. Although monitoring of industrial reforestation activities is the responsibility of the Timber Management Branch, tabular data has been included in the Reforestation section of the report to provide a total reforestation overview.

A. TIMBER MANAGEMENT

1. Introduction

Timber production from public lands in 1982-83 excluding woodchips and slabs totalled 5 560 131 cubic metres (m^3), a decrease of 3 902 m^3 from the previous year. Coniferous lumber and plywood logs accounted for 4 122 333 m^3 as compared with 4 063 284 m^3 produced in 1981-82.

2. Timber Management Planning

The total number of active timber dispositions for this year is 42 632. Forest Management Agreements, Timber Licences and Commercial Timber Permits (CTP) account for 434 dispositions and Local Timber Permits (LTP) and Tree Tags account for 42 198. Table A1 summarizes the number of active timber dispositions over the past 10 years.

Table A1
TEN YEAR SUMMARY - TIMBER DISPOSITIONS

Year	Miscellaneous & Local Timber Permits and Tree Tags (TM66s)	Timber Licences and Commercial Timber Permits	Coniferous Timber Quotas and Deciduous Timber Allocations	Forest Management Agreements	TOTAL
1973-74	4 086	490	167	5	4 748
1974-75	13 199	517	154	5	13 875
1975-76	15 476	480	142	6	16 104
1976-77	15 282	450	145	6	15 883
1977-78	19 572	469	138	6	20 185
1978-79	26 842	385	135	6	27 368
1979-80	31 294	386	135	6	31 821
1980-81	44 787	394	143	7	45 331
1981-82	41 707	410	139	7	42 263
1982-83	42 198	427	141	7	42 773
Ten Year Average	25 444	441	144	6	26 035

2a Forest Management Agreements (FMA)

Table A2 lists the companies that have entered into FMAs with the Province of Alberta. The table shows the annual allowable cut (AAC) allocated under each agreement.

Table A2
FOREST MANAGEMENT AGREEMENTS

Forest Management Agreement Holder	Allowable Annual Cut	Management Plan Status
Alberta Energy Co. Blue Ridge	* 467 000 m^3 coniferous	Part 1 of Detailed Plan was submitted December, 1979 and is currently under review.
British Columbia Forest Products Ltd. Whitecourt	948 000 m^3 coniferous	Preliminary Plan approved September 1981.
Canadian Forest Products Ltd. Grande Prairie	388 000 m^3 coniferous	Detailed Plan submitted March 1, 1981 has received approval.
Canadian Forest Products (Dell Acres) Hines Creek	9 000 m^3 coniferous	Detailed Plan was approved October 1, 1975.
Procter and Gamble Inc. Grande Prairie	1 176 000 m^3 coniferous	Detailed Plan was approved January 17, 1978.
St. Regis (Alberta) Ltd. Hinton	1 052 000 m^3 coniferous	Second Detailed Plan was approved in 1979.
Weldwood of Canada Ltd. Slave Lake	* 240 700 m^3 deciduous	This FMA was previously held by Alberta Aspen Board Ltd. and is currently under revision. Totally new management plans will be required under the revised agreement.
TOTAL	4 448 700 m^3	

* Preliminary harvest estimates - subject to revision.

2b Coniferous Timber Quota and Deciduous Timber Allocation Planning

Five quotas were sold in 1982-83. Two quotas each were sold in Lac La Biche Forest and Whitecourt Forest. The remaining quota included in the sold category was an amalgamation of two existing quotas in the Peace River Forest. One quota in each of the Athabasca and Lac La Biche Forests were cancelled in 1982-83. There was no change in the status of the seven Deciduous Timber Allocations in 1982-83.

Two quotas were granted in 1982-83. One in the Whitecourt Forest and one in the Edson Forest and both were as a result of quota expansions (O.C. 130/82 and O.C. 555/82).

Table A3
CONIFEROUS TIMBER QUOTA AND DECIDUOUS TIMBER ALLOCATION
CURRENT STATUS
March 31, 1983

Forest	Coniferous Timber Quota		Deciduous Timber Allocation	
	(number of)	(AAC in m^3)	(number of)	(AAC in ha)
Athabasca	7	172 063	-	-
Bow/Crow	14	224 104	-	-
Edson	12	74 579	2	837
Footner Lake	10	495 624	-	-
Grande Prairie	1	70 132	-	-
Lac La Biche	6	108 143	-	-
Peace River	9	287 364	-	-
Rocky/Clearwater	29	163 087	1	186
Slave Lake	29	644 376	2	2 667
Whitecourt	24	516 042	2	646
TOTAL	141	2 755 514	7	4 336

3. Woods Operations

Timber harvesting operations on public land must be conducted in accordance with an approved operating plan (AOP). Field staff approved and/or checked 148 timber licence AOPs and commercial timber permit AOPs. Staff also conducted 2 152 woods inspections on the timber licence areas and on the commercial timber permit areas, related to the approved AOPs.

4. Scaling

The volume of weight scale sample loads of logs check-scaled by the A.F.S. staff amounted to 19 071 m^3.

During the year, 135 scaling permits and 16 scaling licences were issued.

5. Timber Audits

Thirty-eight audits of timber volumes produced by industry were completed during the year. These audits include quadrant cutoffs for 25 quotas.

Table A4
TIMBER DISPOSITIONS HANDLED

Disposition Type	Granted	Sold	Not Sold	Offered For Sale	Total Issued
Coniferous Timber Quota	2	5	-	5	7
Deciduous Timber Allocation	-	-	-	-	-
Coniferous Timber Licence	10	-	-	-	10
Deciduous Timber Licence	-	-	-	-	-
Commercial Timber Permit	41	23	6	29	64
Coniferous (green)	7	22	-	22	29
Coniferous (dead)	34	1	6	7	35
Deciduous	-	-	-	-	-
Local Timber Permits	-	1 841	-	-	1 841
TM66 (Tree Tags)	-	40 357	-	-	40 357
Custom Sawmill and Other Miscellaneous Permits	-	26	-	-	26
TOTAL	53	42 252	6	34	42 305

A total of 32 sales were advertised in 1982-83. Twelve of these sales were for Commercial Timber Permits, Coniferous Timber Quotas of Deciduous Timber Allocations. The remaining 20 sales were for miscellaneous items such as Local Timber Permit draws or sales of seized wood.

Table A5
SUMMARY OF TIMBER OPERATIONS ON PUBLIC LANDS

Product	Species	Forest Management Agreements Timber Licences, Commercial Permits	Local Timber Permits, Tree Tags	Total Product Volume	Value per unit $	Total Value $
Lumber and Plywood Logs (m^3)	Coniferous	3 960 115	162 218	4 122 333	40.50	166 954 486.50
	Deciduous	93 198	22 823	116 021	31.45	3 648 860.45
Round Timber (m^3)	Coniferous	37 277	120 786	158 063	76.30	12 060 206.90
	Deciduous	228	2 525	2 753	76.30	210 053.90
Pulpwood (m^3)	Coniferous	987 320	23 181	1 010 501	17.45	17 633 242.45
	Deciduous	-	1 802	1 802	17.45	31 444.90
Woodchips (m^3)	Coniferous	853 307	-	853 307	11.03	9 411 976.21
Fuelwood (m^3)	Coniferous	3 375	75 693	79 068	20.77	1 642 242.36
	Deciduous	165	51 366	51 531	20.77	1 070 298.87
Railway Ties (m^3)	Coniferous	17 996	-	17 996	60.12	1 081 919.52
Slabs (m^3)	Coniferous	225	-	225	20.77	4 673.25
Lath (m^3)	Coniferous	-	63	63	454.55	28 636.65
Christmas Trees (number)		605	49 848	50 453	3.00	151 359.00
Transplants (number)		-	15 941	15 941	2.00	31 882.00
TOTAL VOLUME * (m^3)	Coniferous	5 006 083	381 941	5 388 024		209 000 624.84
	Deciduous	93 591	78 516	172 107		4 960 658.12
		5 099 674	460 457	5 560 131		213 961 282.96

* Excludes woodchips and slabs

Note: Production on other Crown lands not included in the above:

Federal Parks - 145 100 m^3
Metis Colonies - 0 m^3

Table A6
TEN-YEAR PRODUCTION SUMMARY

Product		1982-83	1981-82	1980-81	1979-80	1978-79	1977-78	1976-77	1975-76	1974-75	1973-74	Average
Lumber and Plywood Logs												
Coniferous	(m^3)	4 122 333	4 063 284	3 782 445	3 910 597	2 936 284	2 882 231	2 579 461	2 140 853	1 705 203	2 930 858	3 105 355
Deciduous	(m^3)	116 021	131 706	106 206	17 949	24 993	11 632	2 859	24 166	52 354	47 689	53 558
Round Timber												
Coniferous	(m^3)	158 063	141 747	144 031	170 732	81 217	216 821	181 163	97 268	132 381	86 158	140 958
Deciduous	(m^3)	2 753	8 723	4 166	611	401	74	-	1 350	872	33	1 898
Pulpwood												
Coniferous	(m^3)	1 010 501	1 111 539	1 326 305	1 580 178	1 545 078	1 639 787	1 579 038	1 728 864	2 211 314	1 386 802	1 511 941
Deciduous	(m^3)	1 802	3 456	94	6 774	2 035	10 809	2 520	2 125	-	-	2 962
Woodchips	(m^3)	853 307	859 625	790 000	798 069	879 560	538 746	316 577	160 409	239 517	332 174	576 798
Fuelwood												
Coniferous	(m^3)	79 068	47 312	45 158	36 618	41 964	28 768	29 346	8 383	7 602	3 838	32 806
Deciduous	(m^3)	51 531	38 229	21 311	27 807	18 134	18 345	20 038	2 963	5 551	5 481	20 939
Railway Ties	(m^3)	17 996	17 817	23 520	13 663	21 702	27 582	35 224	48 396	33 744	14 652	25 430
Slabs	(m^3)	225	237	15	65	319	344	354	377	21	891	285
Lath	(m^3)	63	220	65	82	301	2 409	-	1 837	1 620	2 364	896
Christmas Trees	(number)	50 453	47 495	37 396	34 291	30 727	23 902	17 702	18 367	16 737	7 820	28 489
Transplants	(number)	15 941	47 487	36 384	215 158	61 377	28 507	37 644	27 050	16 201	2 441	48 819
TOTAL VOLUME*	(m^3)	5 560 131	5 564 033	5 453 301	5 765 011	4 672 109	4 838 456	4 429 649	4 056 206	4 150 640	4 477 875	4 886 741

*Excludes woodchips and slabs.

B. REFORESTATION AND RECLAMATION

1. Introduction

The Reforestation and Reclamation Branch is responsible for all A.F.S. reforestation and reclamation projects, the provincial forest genetics and tree improvement program, and the Pine Ridge Forest Nursery.

2. Reforestation

Reforestation surveys were completed on 20 626 hectares (ha) of cutover land including 9 592 ha of post harvest surveys and 11 034 ha of regeneration surveys. Of the area surveyed for regeneration, 76 percent was found satisfactorily stocked according to existing provincial standards (see Table B1).

Silviculture treatments completed by the A.F.S. included mechanical scarification of 8 131 ha, seeding of 3 212 ha, planting of 7 202 774 seedlings on 5 398 ha and thinning of 543 ha. Cone collection totalled 17 500 hectolitres (hl) of pine and 5 219 hl of spruce cones (see Table B3). Of these totals, 8 733 hl of pine cones were collected and 135 ha of thinning was accomplished through the Priority Employment Program (PEP). In addition PEP also funded the cleanup of some stands where trees were killed by the Mountain Pine Beetle in the Bow/Crow Forest.

The Maintaining Our Forests Program (MOF), funded through the Alberta Heritage Savings Trust Fund continued to reforest brushland and burned areas to replace forest lands burned by forest fire or lost to other resource developments such as seismic lines etc. Accomplishments this year include 161 130 ha of stocking surveys, 10 091 ha of land clearing, 9 573 997 trees planted on 6 606 ha, 1 009 hl of cones collected, 30 ha aerially seeded, and 702 ha thinned (see Table B5).

3. Reclamation

During the year some 32 operational reclamation projects were undertaken to clean up disturbances on creek crossings, gravel pits, millsites, wellsites, recreational campsites, and/or about 70 km of abandoned roads, trails and lines. The cleanup of the shoreline and floating wood and debris in the Brazeau Reservoir continued. This work included the cutting of the remaining standing snags, piling and burning. This year the major part of the project was considered complete; there may, however, be periodic future work required as new wood and debris accumulate.

Work continued on the joint government/industry sponsored reclamation research program on woody species for reclamation. Field trials on reclamation established in earlier years on oil sands mine wastes and on abandoned coal mines in the Eastern Slopes were monitored, maintained and progress reports prepared on some of the studies. The first complete data collections

from the experiments established in 1980 to study the effects of thinning and fertilization on the growth of a young lodgepole pine stand near Edson were carried out.

4. Genetics and Tree Improvement

As part of the co-operative genetics and tree improvement program, an agreement was signed with the FMA holders regarding development of seed orchards in Alberta. A land parcel near Grande Prairie was purchased for a seed orchard complex which will be developed and operated by a co-operative formed by B.C. Forest Products Ltd., Canadian Forest Products Ltd., and Procter and Gamble Cellulose Ltd. Four additional lodgepole pine progeny test research plantations were established jointly with Blue Ridge Lumber (1981) Ltd., and seven white spruce and eight lodgepole pine superior trees were selected in northwestern Alberta.

Six research plantations were established at various locations throughout the province, and the first seed orchard planting to produce genetically-improved white spruce seed for reforestation was established at Pine Ridge. Site development and fencing of two experimental areas was completed. Stock from an additional 18 species was raised for planting in the research arboretum established at Pine Ridge in 1982, and expansion of clone banks continued with the addition of 25 white spruce and 22 lodgepole pine clones. Forty-six new seedlots were added to the genetics seed bank and 756 seedlots were germination tested. Experimental planting stock production consisted of 37 302 seedlings and 849 grafts. Several research studies on flowering and seed production, vegetative propagation, pollen management technology, and plant propagation were continued or completed.

Funding through the Alberta Heritage Savings Trust Fund allowed for an expanded program in genetics and tree improvement during the year.

5. Pine Ridge Forest Nursery

Pine Ridge Forest Nursery continued to expand seedling production. The completion of additional shade frames last year now enables double cropping of the greenhouses. An additional Grayco seedling harvester and tractor were purchased to allow for lifting of the expanded bareroot production. The fleet of refrigerated vans for delivering seedlings was expanded.

The Research and Investigations Program continued to provide technical assistance in developing production techniques and monitoring growth rates of bareroot and container seedlings.

The Seed Program processed 12 241 hl of pine cones and 5 900 hl of spruce cones. The total seed inventory was increased by 6 377 kg, to a total of 43 085 kg (see Table B7).

The Containerized Seedling Program continued to increase production. 17 715 744 seedlings were grown in 1982 and 13 700 626 seedlings were shipped to reforestation sites for planting. The Bareroot Seedling Program now has an overall inventory of 43 441 969 seedlings on site. A total of 10 552 482 seedlings were lifted in 1982 and 7 337 712 bareroot seedlings were shipped for planting (See Table B8).

Table B1

REGENERATION SURVEYS
1982-83

FOREST	ALBERTA FOREST SERVICE			INDUSTRY			GRAND TOTAL (ha)
	Stocked (ha)	Non-Stocked (ha)	Total Surveyed (ha)	Stocked (ha)	Non-Stocked (ha)	Total Surveyed (ha)	
Athabasca	550	126	676	155.7	49.9	205.6	881.6
Bow/Crow	929	421	1 350	232.7	101.2	333.9	1 683.9
Edson	357	123	480	4 958.4	1 404.9	6 363.3	6 843.3
Footner Lake	691	286	977	1 301.0	263.0	1 564.0	2 541.0
Grande Prairie	1 003	178	1 181	1 402.2	231.8	1 634.0	2 815.0
Lac La Biche	1 023	315	1 338	118.4	0.0	118.4	1 456.4
Peace River	663	627	1 290	2 022.8	179.1	2 201.9	3 491.9
Rocky/Clearwater	1 097	155	1 252	223.0	66.0	289.0	1 541.0
Slave Lake	1 681	149	1 830	1 101.4	370.4	1 471.8	3 301.8
Whitecourt	440	220	660	2 376.9	423.9	2 800.8	3 460.8
TOTAL	8 434	2 600	11 034	13 892.5	3 090.2	16 982.7	28 016.7

Table B2

TEN-YEAR SUMMARY -- REGENERATION SURVEYS
1973-1983

YEAR	ALBERTA FOREST SERVICE			INDUSTRY			GRAND TOTAL (ha)
	Stocked (ha)	Non-Stocked (ha)	Total Surveyed (ha)	Stocked (ha)	Non-Stocked (ha)	Total Surveyed (ha)	
1973-74	10 422	15 245	25 667	9 669	7 391	17 060	42 763
1974-75	6 541	3 404	9 945	10 113	7 495	17 608	27 553
1975-76	12 750	6 091	18 841	10 788	5 401	16 189	35 030
1976-77	11 055	6 226	17 281	8 715	8 297	17 012	34 293
1977-78	10 114	8 841	18 955	7 295	9 702	16 998	35 953
1978-79	10 271	2 696	12 967	12 126	8 779	20 905	33 872
1979-80	10 315	3 154	13 469	13 620	6 938	20 558	34 027
1980-81	8 322	1 614	9 936	17 237	6 083	23 321	33 257
1981-82	9 701	2 874	12 577	14 262	3 668	17 930	30 507
1982-83	8 434	2 600	11 034	13 893	3 090	16 983	28 017

Table B3

REFORESTATION WORK CONDUCTED BY THE ALBERTA FOREST SERVICE
1982-83

FOREST	Scarification (ha)	Seeding (ha)	CONES COLLECTED			Thinning (ha)	SEEDLINGS PLANTED		Prescribed Burn (ha)
			Pine (hl)	Spruce (hl)	Other (hl)		Conventional (Number)	Container (Number)	
Athabasca	-	-	-	-	-	-	-	382 092	-
Bow/Crow	709	176	1 217	286	-	-	760 105	425 600	-
Edson	724	144	306	7	-	399	200 364	432 702	-
Footner Lake	1 059	292	-	919	-	-	608 331	344 537	-
Grande Prairie	904	304	1 754	-	-	-	69 100	-	-
Lac La Biche	696	41	-	290	-	-	201 277	-	-
Peace River	201	411	112	318	-	55	-	1 176 350	-
Rocky/Clearwater	904	353	1 653	16	-	-	125 657	121 687	-
Slave Lake	2 173	1 491	12 360	3 383	-	-	710 286	825 454	-
Whitecourt	761	-	98	-	-	89	816 000	3 232	-
TOTAL	8 131	3 212	17 500	5 219	—	543	3 491 120	3 711 654	-

* One hl of spruce cones yields approximately 1.168 kg of seed and one hl of pine cones yields approximately 0.312 kg of seed.

Table B4

REFORESTATION AND SILVICULTURAL IMPROVEMENT WORK BY FOREST INDUSTRY 1982/83

FOREST	SCARIFICATION (ha)	SEEDING (ha)	CONE COLLECTION Pine (hl)	CONE COLLECTION Spruce (hl)	THINNING (ha)	SEEDLINGS PLANTED Conventional Number & Area (ha)	SEEDLINGS PLANTED Container Number & Area (ha)
Athabasca	-	-	-	-	-	-	250 470 (200.8)
Bow/Crow	142.1	-	-	11.5	-	-	118 180 (89.9)
Edson	3 146.4	-	154.5	100.0	34.9*	251 250 (200.9)	2 545 800 (2 386.6)
Footner Lake	1 310.0	1 209.0	-	-	-	142 800 (130.0)	-
Grande Prairie	1 305.0	500.0	256.0	64.0	6.0	2 335 311 (1 867.0)	274 900 (218.0)
Lac La Biche	-	-	-	-	-	-	102 400 (95.5)
Peace River	1.6	1.6	97.0	-	-	-	94 800 (242.9)
Rocky/Clearwater	112.0	-	73.6	-	-	-	40 000 (35.0)
Slave Lake	253.0	253.0	-	-	5.7	-	476 930 (394.3)
Whitecourt	2 210.0	194.2	21.8	36.4	105.3**	-	298 030 (241.7)
TOTALS	8 480.0	2 157.8	602.9	211.9	151.9	2 729 361 (2 197.9)	4 201 510 (3 904.7)

* Area treated under the Forest Employment Bridging Program.
** 46.6 ha treated under the Forest Employment Bridging Program.

Table B5

TEN-YEAR SUMMARY — REFORESTATION BY THE ALBERTA FOREST SERVICE
1973-1983

Year	Scarification (ha)	Seeding (ha)	Thinning (ha)	Seedlings Planted	
				Conventional (Number)	Container (Number)
1973-74	6 594	1 332	108	* 1 228 392	1 334 588
1974-75	6 296	2 047	72	** 1 140 705	1 224 396
1975-76	6 697	1 885	104	*** 943 702	3 514 664
1976-77	4 757	2 898	546	**** 827 520	2 294 659
1977-78	6 684	4 782	111	224 478	2 378 730
1978-79	10 152	4 653	11	94 118	2 053 885
1979-80	6 324	3 325	15	-	4 898 809
1980-81	6 102	4 687	-	769 200	3 753 887
1981-82	5 964	3 127	251	5 941 149	2 246 687
1982-83	8 131	3 212	543	3 491 120	3 711 654

* Includes 50 800 wildlings planted
** Includes 26 000 wildlings planted
*** Includes 82 032 wildlings planted
**** Includes 137 776 wildlings planted

Table B6

SUMMARY OF MAINTAINING OUR FORESTS
REFORESTATION FIELD WEEK
1982-83

Forest	SITE PREPARATION		PLANTING		CONE COLLECTION			Thinning (ha)
	Land Clearing (ha)	Scarification (ha)	Conventional (Number)	Container (Number)	Pine (hl)	Spruce (hl)	Other Specify (hl)	
Footner Lake	1 660	-	-	1 588 496	-	620	-	-
Lac La Biche	1 971	2 035	-	3 008 980	-	241	-	-
Peace River	3 452	4 819	-	3 165 120	-	148	-	71
Slave Lake	3 008	3 101	225 183	1 586 218	-	-	-	-
Edson	-	-	-	-	-	-	-	280
Rocky/Clearwater	-	-	-	-	-	-	-	236
Whitecourt	-	-	-	-	-	-	-	115
TOTAL	10 091	9 955	225 183	9 348 814	-	1 009	-	702

Table B7
MAINTAINING OUR FORESTS
REGENERATION SURVEYS
1982-83

Forest	STOCKING SURVEYS		
	Aerial Reconnaissance (ha)	Ground Reconnaissance (ha)	Ground Intensive (ha)
Footner Lake	110 000	-	-
Lac La Biche	27 000	181	698
Peace River	4 400	-	401
Slave Lake	14 000	2 629	1 821
TOTAL	155 400	2 810	2 920

Table B8
PINE RIDGE FOREST NURSERY SEED PROGRAM
1980-82

Pine	1980-81	1981-82	1982-83
Cones received (hl)	6 080	5 458	17 973
Cones processed (hl)	6 080	6 056	12 241
Seed cleaned (kg)	1 647	1 589	2 660
Seed stored (kg)	10 318	8 293	11 061
Spruce	**1980-81**	**1981-82**	**1982-83**
Cones received (hl)	2 309	3.3	5 900
Cones processed (hl)	2 309	3.3	5 900
Seed cleaned (kg)	2 843	1.3	6 580
Seed stored (kg)	31 184	28 415	32 024

Table B9

PINE RIDGE FOREST NURSERY BAREROOT AND CONTAINER SEEDLING PROGRAM

Program	1980-81 Pine	1980-81 Spruce	1981-82 Pine	1981-82 Spruce	1982-83 Pine	1982-83 Spruce
BAREROOT PROGRAM						
Seedlings grown:						
Age 0 - 1.0 years	1 695 720	12 427 440	700 000	17 310 000	500 000	10 870 000
Age 1.0 - 2.0 years	844 670	6 087 848	1 436	9 301 500	986 800	21 939 400
Age 2.0 - 3.0 years	-	3 668 673	1 599 900	11 290 800	1 120	9 144 649
Seedlings lifted	1 254 558	2 701 967	1 237 555	7 769 855	1 110 400	9 442 082
Seedlings shipped	895 333	34 064	474 225	5 713 278	1 586 285	5 751 427
CONTAINER PROGRAM						
Seedlings grown	1 810 000	9 765 000	255 800	13 044 438	1 856 272	15 859 472
Seedlings shipped	2 967 000	9 479 000	951 961	7 749 229	810 195	12 890 431

C. FOREST LAND USE

1. Introduction

The following information pertains to forest land use activities of the A.F.S.

2. Range Management

The A.F.S. managed 519 grazing dispositions outside the Rocky Mountain Forest Reserve and are summarized in Table C1.

Table C1
GREEN AREA GRAZING DISPOSITIONS
OUTSIDE THE ROCKY MOUNTAIN FOREST RESERVE

Forest	Active Dispositions[1]	Hectares	AUM	Annual Range Inspections	Renewal/New Reports Received	Current Range Improvement Projects
Athabasca	2	904	447	1	-	1
Bow/Crow	75	64 472	38 234	33	15	13
Edson	68	23 326	13 833	48	19	6
Footner Lake	-	-	-	-	-	-
Grande Prairie	76	57 849	24 120	68	23	13
Lac La Biche	18	6 172	3 660	6	3	4
Peace River	19	8 310	3 315	3	5	3
Rocky/Clearwater	131	72 879	36 017	79	33	17
Slave Lake	55	14 935	8 771	44	19	6
Whitecourt	75	21 138	12 498	58	24	13
TOTAL	519	269 985	140 895	340	141	76

[1]Dispositions include Grazing Leases, Forest Grazing Licenses, Grazing Permits and Head Tax Permits

In the Rocky Mountain Forest Reserve, the number of Animal Unit Months (AUM) of grazing utilized was 74 368 AUM from a total available of 80 797 AUM. A total of 25 093 head of adult livestock grazed on 91 allotments. The revenue collected was $156 954.53 from 265 permits which were issued. These are summarized in Table C2.

Table C2
ROCKY MOUNTAIN FOREST RESERVE

Forest Ranger Districts	Allotments	Revenue	Permits	Adult Stock	AUM Utilized
B/C - DB1	13	37 015.17	53	6 395	19 001
B/C - DB2	5	8 384.40	16	1 539	4 304
B/C - DB4	9	13 405.90	9	1 773	6 012
B/C - DB5	13	12 097.10	17	1 693	5 624
B/C - DB6	43	79 335.98	160	12 783	36 079
R/C - DR5	8	6 715.98	10	910	3 348
TOTAL	91	156 954.53	265	25 093	74 368

There were 154 head of stock including calves found dead or missing by various means.

Within the Green Area, the A.F.S. administers three range improvement programs: (1) Public Grazing Land, (2) Kananaskis Country and (3) Forest Reserve Range Improvement Programs.

Public grazing land range improvement statistics are summarized in Table C3. Total budget spent for this program in 1982/83 was $256 316.

Table C3
PUBLIC GRAZING LAND RANGE IMPROVEMENT PROGRAM

Forest	Clearing & Piling (ha)	Breaking (ha)	Working Down (ha)	Repiling (ha)	Seed and Fertiliser (ha)	Dugouts	Others
Athabasca	41.5	-	-	21.9	8.1	1	-
Bow/Crow	325.0	-	-	183.7	-	-	-
Edson	33.6	-	-	26.3	-	1	-
Grande Prairie	54.2	25.1	-	-	-	-	-
Peace River	-	117.4	101.2	-	101.2	-	Texas Gate - 1 Culverts - 12
Rocky/Clearwater	138.4	-	-	-	-	-	-
Slave Lake	44.5	-	-	-	-	1	-
Whitecourt	99.6	-	-	41.3	8.1	2	-
TOTAL	736.8	142.5	101.2	273.2	117.4	5	

Kananaskis Country Range Improvement Program statistics are summarized in Table C4. Total budget spent for this program in 1982-83 was $194 439.00.

Table C4
KANANASKIS COUNTRY RANGE IMPROVEMENT PROGRAM

Allotments	Clearing and Piling (ha)	Salvage (ha)	Herbicide (ha)	Other (ha)
North Sheep	151.3	35.0	84.6	Culverts - 2
Fish Creek	137.6	2.0	47.0	-
TOTAL	288.9	37.0	131.6	

In the Rocky Mountain Forest Reserve Range Improvement Program, one cattle guard was installed in Ranger District DB6, 11.5 km of fence was constructed on the Jumping Pound/Indian Reserve boundary and 21.6 km of fence line and 0.8 km of access trails were seeded which completed the Jumping Pound/Indian Reserve fence line project.

3. Petroleum and Natural Gas

A decrease in use of forest lands by the petroleum and natural gas industry was evidenced by a one percent decrease in applications processed for land surface rights. Table C5 shows the applications processed by forest, for the last five years.

Table C5
APPLICATIONS PROCESSED FOR LAND SURFACE RIGHTS FOR THE PETROLEUM AND NATURAL GAS INDUSTRY

Forest	1978-79	1979-80	1980-81	1981-82	1982-83
Athabasca	60	98	179	147	58
Bow/Crow	128	111	83	63	62
Edson	128	413	310	260	204
Footner Lake	287	345	210	254	432
Grande Prairie	338	628	402	321	236
Lac La Biche	428	458	607	448	207
Peace River	320	239	245	298	303
Rocky/Clearwater	283	374	183	148	164
Slave Lake	491	672	625	456	693
Whitecourt	655	721	483	354	365
TOTAL	3 118	4 059	3 327	2 749	2 724

In addition, 1 187 amendments and a total of 271 Sand and Gravel Dispositions and Miscellaneous Permits and Leases were approved. In addition, numerous holdings, land use restrictions and administrative reservations were processed.

Timber damage assessments on Land Dispositions - timber damage assessments were computed on 2 312 dispositions in 1982-83.

4. Watershed Management

As part of a continuing inventory program of precipitation and streamflow, a data network has been established. A total of 135 precipitation storage gauges and 17 water level recorders were collecting data in the Green Area in 1982-83. These are summarized by Forest in Table C6.

Table C6
PRECIPITATION AND STREAMFLOW NETWORK

Forest	Number of Precipitation Gauges	Frequency of Reading	Number of Water Level Recorders
Athabasca	1	semi-annually	
Bow/Crow	45	10 monthly 35 semi-annually	3
Edson	18	10 semi-annually 1 monthly 7 monthly in Tri-Creeks	5
Footner Lake	4	semi-annually	
Grande Prairie	19	semi-annually	5
Lac La Biche	2	semi-annually	
Peace River	2	semi-annually	
Rocky/Clearwater	22	3 monthly 19 semi-annually	2
Slave Lake	11	semi-annually	2
Whitecourt	11	10 semi-annually 1 monthly	

5. Forest Recreation

The A.F.S. has continued to play a dual role in outdoor recreation:

1. As a primary land manager, implementing land use/resource management legislation and policies to protect recreation values and to regulate recreation activities.

2. As a public service agency, delivering a forest recreation program to provide a wide range of resource-oriented, dispersed, extensive outdoor recreation opportunities within an integrated resource management framework.

To these ends, a variety of programs and facilities have been developed and are maintained by the A.F.S. throughout the Green Area. These include small, low density auto access campgrounds and picnic areas, water access points, trail systems and staging areas for various activities, group camps and remote campsites. Basic services are provided at A.F.S. Recreation Areas, such as toilets, garbage receptacles, firewood, tables, fire-rings, drinking water by hand pumps and boat launches where a facility is located on a water body.

A total of $1.05 million was spent on upgrading and new construction in 1982-83, broken down as follows:

UPGRADING

Twenty-one existing Forest Recreation Areas were upgraded this year. The projects totalled $625 000.

Beaver Mines Recreation Area
Burnt Timber Recreation Area
Cavalcade Group Camp
Dore Lake Recreation Area
Harlech Recreation Area
Hutch Lake Recreation Area
Lawrence Lake Recreation Area
Lovett River Recreation Area
Machesis Lake Recreation Area
Pembina Forks Recreation Area
Peppers Lake Recreation Area
Pierre Greys Lakes Recreation Area
Rainbow Lake Recreation Area
Ram Falls Recreation Area
Rock Lake Recreation Area
Running Lake Recreation Area
Strachan Recreation Area
Sulphur Lake Recreation Area
Touchwood Lake Recreation Area
Two Lakes Recreation Area
Upper Shunda Recreation Area

*Recreation Areas include camping and day use facilities

NEW CONSTRUCTION

Trails were the main focus of new construction this year. In total, 15 new construction projects were undertaken, totalling $425 000.

Aylmer Hiking/Equestrian Trail
Big Mountain Snowmobile Trails
Clearwater Hiking/Equestrian Trail

Eagle River Snowmobile Trails
Fox Creek Snowmobile Trails
Krause Lake Snowmobile Trails
Mile 18 Water Access Point
Minnow Lake Group Camp
North Saskatchewan River Water Access Point
Sandhills Cross-Country Ski Trail
Shaw Lake Group Camp
Shuttler Flats Group Camp
Siffleur Hiking/Equestrian Trail
South Ram Overflow Area
West Fawcett Lake

*Trails include staging areas, trails and in some cases, backcountry campsites.

The following is a detailed listing of the formal Forest Recreation Areas (Tables C7, C8 and C9) operated and maintained by the A.F.S.

Table C7

LIST OF FOREST RECREATION AREAS

FOREST	RECREATION AREA	CAMPING UNITS	DAY USE UNITS	LOCATION
Athabasca	Cascade Rapids Remote	11	-	92 km E of Ft. McMurray
	Clausen's Landing Remote	2	-	115 km N of Ft. McMurray
	Dore Lake	17	10	15 km N of Ft. Chipewyan
	Engstrom Remote	2	-	73 km E of Ft. McMurray
	(Little) Fishery Creek	-	3	Ft. McMurray (Thickwood Heights)
	Magua Lake	13	25	40 km S of Ft. McMurray
	Miseieutin Remote	3	-	52 km E of Ft. McMurray
	Pearson Lake Remote	3	-	90 km N of Ft. McKay
	Whitemud Falls Remote	4	-	109 km E of Ft. McMurray
	TOTAL	55	38	
Bow/Crow	Allison Day Use	-	12	9 km NW of Crowsnest
	Allison Chinook X-C Skiing	-	20	9 km NW of Crowsnest
	Beaver Mines Lake	40	10	30 km SE of Crowsnest
	Bluerock	91	2	45 km W of Turner Valley
	Burnt Timber	20	8	65 km SW of Sundre
	Canyon Creek	-	-	23 km SW of Bragg Creek
	Cartier Creek	-	60	22 km SW of Sundre
	Castle Falls	49	10	18 km S of Crowsnest
	Castle River Bridge	30	6	25 km S of Crowsnest
	Cat Creek Day Use	-	13	45 km SW of Longview
	Cataract Creek	102	14	50 km SW of Longview
	Chinook	63	6	12 km NW of Crowsnest
	Deer Creek Day Use	-	10	45 km SW of Sundre
	Dutch Creek	42	9	30 km NE of Crowsnest
	Etherington Day Use	-	100	45 km SW of Longview
	Fallen Timber	59	50	80 km NW of Cochrane
	Gorge Creek Day Use	-	16	30 km W of Turner Valley
	Indian Grave	28	4	40 km S of Longview
	James-Wilson	15	10	40 km NW of Sundre
	Livingstone Falls	22	6	60 km N of Crowsnest
	Lynx Creek	30	6	15 km S of Crowsnest
	North Fork	24	10	15 km W of Millarville
	North Ghost	173	10	70 km NW of Cochrane
	Oldman River	16	8	40 km N of Crowsnest
	Racehorse Creek	[illegible]	8	25 km N of Crowsnest
	Red Deer River	66	12	55 km SW of Sundre
	Sandy McNabb	98	36	25 km W of Turner Valley
	Sheep Falls Day Use	-	8	40 km W of Turner Valley
	Sibbald Flats	134	15	15 km S of Morley
	South Ghost Snowmobile	-	12	43 km NW of Cochrane

Table C7 Continued

FOREST	RECREATION AREA	CAMPING UNITS	DAY USE UNITS	LOCATION
Bow/Crow cont'd	Syncline X-C Skiing	-	35	30 km S of Crowsnest
	Waiparous Creek	36	10	65 km NW of Cochrane
	Waiparous Valley Viewpoint	-	10	75 km NW of Cochrane
	Wildhorse	9	-	70 km W of Sundre
	TOTAL	1 184	546	
Edson	Big Berland	20	10	70 km NW of Hinton
	Cardinal River Divide	-	4	80 km SE of Hinton
	Cardinal River	20	-	91 km SE of Hinton
	Coalspur	8	4	10 km S of Robb
	Eccles Pond Day Use	-	8	45 km W of Edson
	Emerson Lakes	8	8	56 km NW of Hinton
	Fairfax Lake	-	15	105 km SW of Edson
	Fickle Lake	32	30	39 km SW of Edson
	Grande Cache (Blue Bridge)	22	10	1 km N of Grande Cache
	Grande Cache Lake Day Use	-	25	2 km N of Grande Cache
	Kinky Lake	10	-	22 km SW of Hinton
	Lambert Creek	7	4	40 km S of Edson
	Little Sundance Creek	6	10	26 km NW of Edson
	Lovett River	17	-	30 km SE of Coalspur
	Mason Creek Day Use	-	16	14 km E of Grande Cache
	McLeod River	21	10	26 km SE of Hinton
	Obed Lake	13	4	40 km W of Edson
	Pembina Forks	20	10	109 km S of Edson
	Pierre Greys Lakes	81	22	120 km NW of Hinton
	Pierre Greys X-C Skiing	-	35	120 km NW of Hinton
	Rock Lake	70	22	86 km NW of Hinton
	Steeper Water Access Point	2	-	16 km SW of Robb
	Watson Creek	39	-	112 km SW of Edson
	Whitehorse Creek	13	-	122 km SW of Edson
	Wildhorse Lake	13	8	25 km SW of Hinton
	TOTAL	422	255	
Footner Lake	Buffalo River Day Use	-	6	24 km SW of Rainbow Lake
	Buffalo Tower Day Use	-	10	50 km S of Ft. Vermilion
	Hutch Lake	11	11	36 km N of High Level
	Machesis Lake	21	15	60 km SE of High Level
	Meander River	8	11	80 km N of High Level
	Rainbow Lake	16	7	65 km S of Rainbow Lake
	Steen River	5	5	150 km N of High Level

Table C7 Continued

FOREST	RECREATION AREA	CAMPING UNITS	DAY USE UNITS	LOCATION
Footner Lake cont'd	Tall Cree Crossing	8	15	60 km SE of Ft. Vermilion
	Thurston Lake Remote	3	-	172 km NW of High Level
	TOTAL	72	80	
Grande Prairie	Bison Flats	21	10	110 km SW of Debolt
	Cut Bank River	4	4	100 km S of Grande Prairie
	Economy Lake	6	12	38 km S of Goodwin
	Hilltop Lake	-	15	26 km SW of Woking
	Musreau Lake	83	-	80 km S of Grande Prairie
	Nose Lake Remote	10	5	80 km SW of Grande Prairie
	Simonette River	24	35	19 km SW of Debolt
	Smoky River	5	25	35 km E of Grande Prairie
	Two Lakes	75	35	114 km SW of Grande Prairie
	Waskahigan	15	20	3 km NW of Little Smoky
	Westview	4	4	100 km SE of Grande Prairie
	TOTAL	247	165	
Lac La Biche	Calling River	8	-	130 km NE of Athabasca
	Crow Lake Remote	13	-	130 km S of Ft. McMurray
	House River	15	-	55 km N of Wandering River
	Ironwood Lake Day Use	-	21	58 km SE of Lac La Biche
	Jackson Lake Trail Staging Area	-	6	35 km E of Lac La Biche
	Marianna Lakes	14	10	90 km S of Ft. McMurray
	Mile 18 Lake	-	6	50 km N of Lac La Biche
	Pinehurst Lake	33	10	68 km SE of Lac La Biche
	Seibert Lake	33	15	77 km NW of Bonnyville
	Tanasiuk	20	10	130 km N of Athabasca
	Touchwood Lake	54	-	46 km NE of Lac La Biche
	Wandering River	14	3	90 km N of Boyle
	Winefred Lake Remote	-	5	SW shore of Winefred Lake
	Wolf Lake	59	6	56 km NW of Bonnyville
	TOTAL	263	92	
Peace River	Notikewin	10	-	90 km N of Hines Creek
	Ole's Lake	6	7	86 km W of Hines Creek
	Running Lake	16	20	70 km NW of Hines Creek
	Stoney Lake	13	8	32 km N of Hines Creek
	Sulphur Lake	11	11	78 km NW of Hines Creek
	TOTAL	56	46	

Table C7 Continued

FOREST	RECREATION AREA	CAMPING UNITS	DAY USE UNITS	LOCATION
Rocky/ Clearwater	Blackstone	8	-	30 km N of Nordegg
	Brazeau Reservoir	41	28	25 km SW of Lodgepole
	Brazeau River	10	6	72 km N of Nordegg
	Brown Creek	12	5	45 km N of Nordegg
	Brown Creek Viewpoint	-	6	45 km N of Nordegg
	Chambers Creek	26	6	30 km W of Rocky Mountain House
	Crescent Falls	5	-	18 km SW of Nordegg
	Elk Creek	11	5	65 km S of Nordegg
	Elk River	13	-	110 km N of Nordegg
	Fish Lake	95	40	8 km W of Nordegg
	Gold Eye Lake	44	-	11 km W of Nordegg
	Harlech	11	7	15 km E of Nordegg
	Haven Creek	8	6	14 km W of Nordegg
	Horberg Water Access Pt.	8	-	35 km W of Rocky Mountain House
	Jackfish Lake	5	-	45 km W of Rocky Mountain House
	Kootenay Plains (Two O'Clock Creek)	21	8	64 km W of Nordegg
	Medicine Lake	40	30	37 km NW of Rimbey
	Mitchell Lake	3	-	27 km S of Rocky Mountain House
	North Ram River	20	12	32 km S of Nordegg
	Peppers Lake	17	6	65 km S of Nordegg
	Phyllis Lake	8	-	16 km W of Caroline
	Pinto Lake Remote	6	-	Backcountry Site
	Prairie Creek	47	20	41 km SW of Rocky Mountain House
	Ram Falls	54	44	50 km S of Nordegg
	Saunders Water Access Pt.	5	-	28 km SE of Nordegg
	Seven Mile	38	15	80 km SW of Caroline
	Shunda Beaver Dam	7	12	3 km E of Nordegg
	Shunda Beaver Dam Overflow	87	-	3 km E of Nordegg
	South Fork Prairie Creek	8	-	28 km SW of Rocky Mountain House
	Strachan	23	14	24 km SW of Rocky Mountain House
	Struble Lake (Water Access Point)	-	15	30 km S of Rocky Mountain House
	Swan Lake	16	6	65 km SW of Rocky Mountain House
	Thompson Creek	59	6	87 km SW of Nordegg
	Upper Shunda Creek	21	18	3 km NW of Nordegg
	TOTAL	777	315	
Slave Lake	Lawrence Lake	27	30	48 km NW of Athabasca
	North Wabasca	33	14	142 km N of Slave Lake
	Peerless Lake	18	-	241 km NE of Slave Lake
	West Fawcett Lake	28	23	27 km N of Smith
	TOTAL	106	67	

Table C7 Continued

FOREST	RECREATION AREA	CAMPING UNITS	DAY USE UNITS	LOCATION
Whitecourt	Freeman River	10	5	16 km S of Swan Hills
	Iosegun Lake	32	9	11 km N of Fox Creek
	Smoke Lake	47	23	13 km SW of Fox Creek
	Swan Hills (Freeman Lake)	10	-	8 km W of Swan Hills
	Wolf Lake	27	5	69 km SE of Edson
	TOTAL	126	42	

Table C8

GROUP CAMPGROUNDS

FOREST	NAME	SHELTER	WATER WELL	HORSE CORRALS	LOCATION
Athabasca	Magua Lake		X		40 km S of Ft. McMurray
Bow/Crow	Ghost Airstrip	X	X		68 km NW of Cochrane
	Highwood	X	X		35 km SW of Longview
	North Fork (Equestrian)	X	X	X	15 km W of Millarville
	North Ghost	X	X		70 km NW of Cochrane
	Oldman River (Equestrian)	X	X	X	40 km N of Crowsnest
	Pine Grove A	X	X		50 km SW of Calgary
	Pine Grove B	X	X		50 km SW of Calgary
	Sandy McNabb A	X	X	X	25 km W of Turner Valley
	Sandy McNabb B	X	X		25 km W of Turner Valley
	Syncline A	X	X		28 km S of Crowsnest
	Syncline B	X	X		28 km S of Crowsnest
	Waiparous Creek	X	X		65 km NW of Cochrane
Edson	Embarras River	X	X		37 km SW of Edson
	Wild Hay River	X			48 km NW of Hinton
Grande Prairie	Shuttler Flats	X	X		50 km SW of Grande Prairie
Lac La Biche	Shaw Lake	X	X		30 km E of Lac La Biche
Peace River	Sulphur Lake	X	X		78 km NW of Hines Creek
Rocky/ Clearwater	Cavalcade A		X		64 km W of Nordegg
	Cavalcade B		X		64 km W of Nordegg
	Cavalcade C		X		64 km W of Nordegg
	Chambers Creek	X	X		30 km W of Rocky Mtn. House
	Prairie Creek	X	X		41 km SW of Rocky Mtn. House
	Snow Creek	X			16 km W of Nordegg
	Upper Shunda	X			3 km NW of Nordegg

Table C9

SUMMARY OF DEVELOPED RECREATION AREAS AND FACILITIES BY FOREST

FOREST	AUTO-ACCESS CAMP-GROUNDS	CAMPING UNITS	DAY USE UNITS	GROUP CAMPS	REMOTE CAMPSITES	BACKCOUNTRY CAMPSITES (ON TRAILS OR RIVERS)	WATER ACCESS POINTS	OVERFLOW AREAS	TRAILS (km)
Athabasca	2	55	38	1	1	6	-	-	50
Bow/Crow	27	1 174	558	11	-	4	1	1	1 090
Edson	19	422	255	2	-	-	1	-	380
Footner Lake	6	72	80	-	1	-	-	-	-
Grande Prairie	6	247	165	1	-	-	2	-	65
Lac La Biche	8	263	92	1	2	-	2	-	-
Peace River	4	56	46	1	-	-	-	-	-
Rocky/Clearwater	28	777	315	7	-	-	2	2	190
Slave Lake	4	106	67	-	-	-	-	-	-
Whitecourt	5	126	42	-	-	-	-	-	245
TOTAL	109	3 298	1 658	24	4	10	8	3	2 020

Funds for operation and maintenance of the above recreation developments totalled approximately $2.25 million.

6. Geophysical

The timber damage assessment rate for new clearing in the Green Area remained at $214.03 per hectare. The rate for re-use of existing line remained at $46.19 per hectare. These rates are established by Timber Management Branch and are directly related to the average rate of timber dues for the previous year. Exploration activity for geophysical applications are summarized in Table C10.

Table C10

EXPLORATION ACTIVITY FOR OIL AND GAS ON PUBLIC FOREST LANDS
1972-83 GEOPHYSICAL APPLICATIONS

Year	Preliminary Plans Approved	Lines Cut (km)	Existing Lines Used (km)
1972-73	273	3 605	3 513
1973-74	401	3 953	4 365
1974-75	205	2 554	2 541
1975-76	325	2 148	3 714
1976-77	387	5 786	5 641
1977-78	639	9 551	9 310
1978-79	743	11 076	10 796
1979-80	676	10 048	9 788
1980-81	643	16 333	13 681
1981-82	652	14 644	14 078
1982-83	746	*20 642	*23 599

Seismic activity increased from the previous year.

* Estimated

7. Revenue

Timber damage assessments, forest protection levies and Crown Dues amounted to approximately $3 161 000.

D. FOREST PROTECTION

1. Introduction

The continuing dry fire season resulted in 1 257 fires burning 679 545 ha in 1982. Most of this area burned in June when multiple lightning-originated fires spread very rapidly under drought condition. The direct suppression costs escalated to almost $56 million.

Table D1

COMPARISON OF FIRE CAUSES BY PERCENTAGES
TEN YEAR SUMMARY

CAUSE	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982
Recreation	17.2	14.5	26.4	17.6	26.4	19.3	23.2	10.1	14.7	13.2
Resident	15.3	5.5	11.4	13.4	10.4	7.4	4.3	14.8	8.8	9.9
Railroads	5.6	1.2	2.2	1.4	4.5	3.7	0.5	1.4	1.4	2.0
Lightning	26.6	46.2	29.3	23.8	23.7	42.4	51.8	45.2	55.4	55.4
Forest industry	2.5	3.3	3.3	3.6	2.5	0.8	1.0	1.8	1.1	0.4
Other industry	7.5	4.5	3.2	6.2	9.4	6.0	6.9	8.0	4.3	5.6
Incendiary	5.6	6.4	8.5	20.8	9.4	8.0	5.7	9.0	4.5	4.2
Unclassified	11.3	8.2	10.4	7.5	10.3	8.9	5.1	8.0	6.4	6.9
Unknown	7.1	6.9	3.0	4.4	1.1	2.0	1.5	1.9	2.4	2.4
Public project	1.3	3.3	2.3	1.3	2.3	1.7	*			

* As of 1979 all public project fires were included in Other industry.

Table D2
FIVE-YEAR SUMMARY — AIRCRAFT

	1978		1979		1980		1981		1982	
All Aircraft	No.	Hour	No.	Hour	No.	Hour	No.	Hour	No.	Hour
Helicopters	72	7 787	125	8 237	206	27 525	248	38 311	251	42 659.4
Fixed Wing	76	3 689	122	4 825	140	11 311	198	9 149	155	11 223.5
Air Tankers	11	1 023	17	1 633	48	4 415	52	5 281	40	3 306.4
TOTAL	159	12 499	264	14 695	394	43 251	498	52 741	446	57 189.3

Table D3
TEN-YEAR SUMMARY OF FIRES
(CROWN LAND ONLY)

Year	Total Fires	*Non-Forested (ha)	Forested (ha)	Total Area (ha)	Suppression Costs
1972	737	11 364	37 925	29 290	5 179 163
1973	478	2 073	8 576	10 690	2 377 984
1974	598	2 299	15 689	18 392	5 619 951
1975	693	1 632	4 156	5 789	3 951 032
1976	774	5 313	17 124	22 473	3 681 894
1977	556	6 049	3 981	10 030	1 176 666
1978	653	5 017	2 773	17 790	2 787 901
1979	1 000	509	194 088	194 597	8 679 644
1980	1 348	204 054	465 106	669 159	26 805 764
1981	1 522	419 928	943 784	1 363 712	51 835 642
1982	1 257	219 576	458 031	677 607	55 912 000

Table D4

SUMMARY OF FOREST FIRE LOSSES FOR 1982

	CLASS OF FIRE						LANDS AFFECTED - HECTARES						VOLUME LOSS		SUPPRESSION COSTS
							Crown Lands								
	A	B	C	D	E	TOTAL	Merch. Timber	Potent. Prod.	Non Prod.	Total Crown land	Priv. Area	Total Area	Timber MCF	Other MCF	Total $
Athabasca	57	39	10	1	6	113	26 076	546	17 359	43 981	-	43 981	2 447 513	31 251 574	4 119 000
Bow/Crow	41	1	3	1	1	47	49	-	160	209	301	510	-	-	60 000
Edson	51	14	2	1	-	68	6	-	6	12	117	129	-	-	5 000
Footner Lake	77	71	25	10	13	196	103 637	165 460	59 142	328 239	425	328 664	9 003	35 470	11 803 000
Grande Prairie	28	9	7	2	1	47	662	10	61	733	172	905	19 081	60 092	670 000
Lac La Biche	87	65	16	12	4	183	22 582	4 592	14 080	41 254	440	41 694	653 391	1 360 570	5 231 000
Peace River	52	46	22	3	9	132	68 697	5 997	56 114	130 808	279	131 087	359 385	512 207	17 390 000
Rocky/Clearwater	39	13	-	-	-	52	10	1	2	13	2	15	-	-	22 000
Slave Lake	126	57	10	14	22	229	56 862	2 671	72 497	132 030	176	132 206	76 794	281 114	1 619 300
Whitecourt	95	32	16	3	-	146	113	4	59	176	230	406	-	-	419 000
TOTAL FORESTS	653	347	111	47	56	1 214	278 694	179 281	219 480	677 455	2 142	679 597	3 565 167	33 501 027	55 912 000
Metis Colony	3	3	-	-	-	6	1	-	2	3	-	3	-	-	-
Indian Reserves	16	19	-	2	-	37	55	-	94	149	-	149	-	-	-
TOTAL Prot. Area	672	369	111	49	56	1 257	278 750	179 281	219 576	677 607	2 142	679 749	3 565 167	33 501 027	55 912 000
													OTHER PROTECTION COSTS		32 684 000
													TOTAL		88 596 000

Table D5
STATEMENT OF FIRES BY CAUSE, DISCOVERY AGENT, DAMAGE AND AREA BURNED
FOR 1982

CAUSE	DISCOVERED BY					DAMAGE	LAND AREA IN HECTARES		
	Towers	Public	Forest Officers	Aircraft	Other	$	Crown	Private	Total
Recreation	18	76	13	22	37	38 190	558	389	947
Forest industries	1	-	-	-	4	-	1	-	1
Other industries	15	31	5	4	16	3 705	29	26	55
Resident	30	61	6	13	14	6 240	602	1 247	1 849
Railroads	7	6	2	4	6	16 366	78	29	107
Lightning	313	22	24	289	48	137 841 342	675 618	7	675 625
Incendiary	17	20	3	8	5	106 493	394	286	680
Unclassified	20	37	3	11	16	2 140	57	44	101
Unknown	9	12	1	6	2	859	270	114	384
TOTALS	430	265	57	357	148	138 015 335	679 609	2 142	679 749
PERCENTAGE	34.2	21.1	4.5	28.4	11.8		99.7	0.3	

Table D6
ANNUAL STATEMENT OF FIRES BY CAUSE, MONTHLY DISTRIBUTION ETC.
FOR THE CALENDAR YEAR 1982

CAUSE	NUMBER							MONTHLY DISTRIBUTION											
	A	B	C	D	E	TOTAL	%	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Recreation	119	34	8	4	1	166	13.2	2	-	-	2	31	25	18	11	29	38	10	-
Forest industries	4	1	-	-	-	5	0.4	-	-	-	1	2	1	-	1	-	-	-	-
Other industries	29	29	-	-	-	58	4.6	-	1	-	5	27	10	4	4	7	-	-	-
Resident	35	43	35	11	-	124	9.9	3	-	1	7	65	29	6	1	7	4	-	1
Railroad	8	12	4	1	-	25	2.0	-	-	-	2	11	11	1	-	-	-	-	-
Lightning	388	182	47	25	54	696	55.4	-	-	-	-	30	496	163	7	-	-	-	-
Incendiary	17	23	6	7	-	53	4.2	-	1	-	3	25	19	3	-	1	1	-	-
Public Projects	6	6	1	-	-	13	1.0	-	3	-	-	3	1	3	1	-	1	1	-
Unclassified	54	27	6	-	-	87	6.9	2	-	-	7	31	24	8	3	8	3	1	-
Unknown	12	12	4	1	1	30	2.4	-	-	-	2	14	9	1	-	3	1	-	-
TOTALS	672	369	111	49	56	1 257	100.0	7	5	1	29	239	625	207	28	55	48	12	1
%	53.5	29.3	8.8	3.9	4.5			0.5	0.3	0.0	2.3	19.0	49.7	16.4	2.2	4.3	3.8	0.9	0.0

TOTAL ha BY SIZE CLASS: A = 0 B = 447 C = 1 837 D = 4 670 E = 672 795

TOTAL ha BY MONTHS:	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
	26	30	1	32	3 326	653 115	22 959	1	108	148	1	2

E. FOREST RESEARCH

1. Introduction

In-house research programs were developed and initiated in the area of forest regeneration and site classification.

Funds were provided to other research agencies in the form of contracts and grants to conduct investigations related to reforestation, site classification and genetics.

The first stage of developing a forest research branch within the A.F.S. has been completed with the recruitment of all staff and initiation of pertinent research programs.

Table E1

RESEARCH EXPENDITURES

Source of Funding	Number of Projects Funded	Total Expenditures $
Forest Development Research Trust Fund	10	157 548
Research contracts	13	428 946
TOTAL	23	586 494